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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,282	08/20/2004	Mikio Ikenishi	330-281	5541
23117 7590 09/19/2007 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
			EXAMINER FALASCO, LOUIS V	
			ART UNIT 1773	PAPER NUMBER
			MAIL DATE 09/19/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

### Application No.

10/505,282

### Applicant(s)

IKENISHI ET AL.

### Examiner

Louis Falasco

### Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 7/6/07, 7/18/07.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 4-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/6/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Papers Received*

1. The Amendment filed 7/6/07 is acknowledged.
2. The Information Disclosure Statement filed 7/6/07 is acknowledged.

### *Claims*

3. The claims are: 1 to <sup>19</sup> ~~N~~.
4. The claims 4 to 17 have been withdrawn as drawn to the previously non-elected invention species.
5. Claims 1 to 3, 18 and 19 are under consideration drawn to the elected species.

### *Rejections*

#### *Statutory Basis*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### *Rejections withdrawn*

6. The Double Patenting rejections made in the previous Office have been withdrawn in response to receipt and acceptance of the Terminal Disclaimer 7/6/07.

7. The rejection under 35 U.S.C. 102 (b) or under 35 U.S.C. 103(a) as obvious over **Nakashima et al** (US 6387510) alone is withdrawn in response to applicants amendments to the claims.

*Rejection*

8. Claims 1 to 3, 18 and 19 are rejected under 35 U.S.C. 103(a) as obvious over **Nakashima et al** (US 6387510) and **Miyamoto** (US 6395634) taken in view of **Goto et al** (US 6426311 - newly cited).

**Nakashima et al** teaches the glass substrate for information recording medium of these claims except addressing a characteristic etch rate for the glass and having no  $Li_2O$  in the glass. In **Nakashima et al** the glass substrate for the information recording media has a *glass transition temperature* ( $T_g$ ) of 600°C or higher as noted in **Nakashima et al** at col. 3 lns 12, 13 and through out the Examples summarized at Tables 1-5 cols. 8 - 11). **Nakashima et al** does not refer to an *etch rate* however, **Miyamoto** teaches the worker of ordinary skill to optimize the *etch rate* within  $0.1 \mu m/minute$  or less etch rate with hydrosilicofluoric acid within 45°C and a concentration within 1.72% by weight (**Miyamoto** col. 7 lns 4-28). This *rate* is characteristic of *Si* and *Al* components dissolution during etching (see **Miyamoto** col. 18 lns 50-57). This is an inherent

characteristic of the glass composition and an inherent characteristic does not render a claim patentable<sup>1</sup>.

As regards eliminating  $Li_2O$  from the composition, though Nakashima et al includes  $Li_2O$ , eliminating it along with its known function has long been held insufficient to render claims patentable<sup>2</sup>. Eliminating  $Li_2O$  would have reasonably been expected to decrease *Young's Modulus* since  $Li_2O$  raises the *Young's Modulus*. Goto et al teaches eliminating the  $Li_2O$  component in glass to eliminate the crystalline phases, which crystalline phases increase *Young's Modulus* (Goto et al col. 5 lns 24-26, col. 9 lns 10-41).

It would have been *prima facie* obvious to one having ordinary skill in the art to optimize Nakashima et al substrate surface by adopting the Miyamoto etch rate, motivated by an appreciation in the art for an improved substrate surface roughness (Miyamoto col. 6 lns 62-64, col. 7 lns 16-17, col. 8 lns 21-24. Further, adapting Goto et al eliminating  $Li_2O$  component lowering the *Young's Modulus* would have been obvious motivated by the desire in the art phases for glass with a reduced brittleness at the lower *Young's Modulus* (Goto et al col. 5 lns 21-44).

As regard claims 2 and 3, 18 and 19: the Nakashima et al glass substrate has  $SiO_2$ ,  $Al_2O_3$ ,  $CaO$  and  $K_2O$  and a composition (mol %): 45 to 70% of  $SiO_2$ , 1 to 15% of  $Al_2O_3$ , with the total content of  $SiO_2$  and  $Al_2O_3$  between 57 to 85%; 2 to 25% of  $CaO$ , 0 to 15% of  $BaO$ , 0 to 15% of  $MgO$ , 0 to 15% of  $SrO$ , 0 to 10% of

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<sup>1</sup> E.g., see MPEP 2112

<sup>2</sup> See MPEP 2144.04

*ZnO*, with *MgO*, *CaO*, *SrO*, *BaO* and *ZnO* between 2 to 30%; more than 0% but not more than 15% of *K<sub>2</sub>O*, 0 to 8% of *Na<sub>2</sub>O*, the total content of *K<sub>2</sub>O*, *Li<sub>2</sub>O* and *Na<sub>2</sub>O* between 2 to 15% with no *Li<sub>2</sub>O* component; 0 to 12% of *ZrO<sub>2</sub>* and 0 to 10% of *TiO<sub>2</sub>*, content of above components at least 95% (see Nakashima et al col. 2 lns 42 - 57, col. 3 lns 3 to col. 4 ln 14, noting optimized *SiO<sub>2</sub>* and *Al<sub>2</sub>O<sub>3</sub>* levels reflection of the amounts dissolved by etch reaction at col. 4 lns 15 - 30 and Tables 1 through 5 compositions at columns 8 to 11).

### ***Conclusion***

9. The claims under consideration are 1 to 3, 18 and 19.
- No claim has been allowed.
  - Information Disclosure Statement has been received.

### ***Answer to Arguments***

10. Applicant's arguments with respect to the claims under consideration filed 7/6/07 have been fully considered but they are considered moot in view of the new grounds of rejection

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

#### INQUIRES

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louis Falasco, PhD whose telephone number is (571)272-1507. The examiner can normally be reached on M-F 10:30 - 7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol D. Chaney, PhD can be reached at (571)272-1284. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

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more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LF  
08/07



**CAROL CHANEY**  
**SUPERVISORY PATENT EXAMINER**